189 Peculiarities of the local immunity of intestine in children with cystic fibrosis

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Introduction: State of the local immune response of the gastrointestinal tract, provided by secretory immunoglobulin A (SIgA), in children with CF remains the least studied.
Material and Methods: The study included 31 children with CF in age from 5 to 17.5 years. The level of SIgA and serum IgA, IgM, IgG in coprofiltrates was measured by radial immunodiffusion (A. Mancini, A. Carbonara 1965). Antiserum to the alpha chain, identifying serum and SIgA, and antiserum to secretory component (SC), determines only the SIgA were used. A control group was represented by 20 healthy people of the same age group.
Results: SIgA was detected in 21 children with CF (67.7%), while in other patients the rate was zero. The level of SIgA in coprofiltrates of all CF patients was significantly reduced (3.52 ± 0.83 mg%, $p < 0.001$) in comparison with healthy children. Free SC practically did not differ from that of healthy children (1.39 ± 0.46 mg%, $p > 0.05$). Serum IgA was determined in every third child with CF (35.5%) at an average concentration equal to 0.82 ± 0.35 mg%, which is apparently caused by increased vascular permeability due to inflammation in the intestine. Serum IgM and IgG in coprofiltrates of children with CF were found in isolated cases: in 6 and 4 patients respectively. Direct correlation between level of SIgA and patients' age ($r = +0.352$, $p < 0.05$), the presence of CFTRdel21kb and delF508 mutations in patients ($r = +0.36$, $p < 0.05$) were identified.
Conclusion: Our studies have illustrated a significant violation of the first line specific defense of intestinal mucosa in CF patients provided by SIgA, and dependence of the level of its reduction from the genotype and age of the patients.

190 Elevated specific IgG against colomycin in patients with neurotoxicity

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Colomycin (colistimethate sodium) is bactericidal against a range of gram-negative bacteria, including *Pseudomonas aeruginosa*, a key pathogen in CF. It has been demonstrated to be safe and effective; however, patients frequently report headaches and paraesthesia during therapy. We have recently demonstrated drug specific lymphocytes in patients with neurotoxicity suggesting an immune aetiology.
In this study we measured specific IgE and IgG against Colomycin (Phadia, Uppsala, Sweden) in a cohort of patients at the Adult CF Unit in Leeds. In total 31 patients were tested, 17 had previous neurotoxicity (10 headaches, 7 paraesthesia), 7 had non-immediate urticarial skin reactions, and 7 were controls (4 tolerant, 3 naïve). The results are outlined in Table 1. All specific IgE antibodies were negative. The colomycin specific IgG levels seen in the neurotoxicity group were significantly elevated compared to the control group ($p = 0.006$).

Specific antibodies to colomycin

	Colomycin Specific IgE (kUA/l)	Colomycin Specific IgG (mgA/l)
Neurotoxicity (n = 17)	<0.35	42.69 (2.14–174)
Non-immediate skin reactions (n = 7)	<0.35	10.40 (2.29–33.6)
Tolerant/naive controls (n = 7)	<0.35	3.19 (0–16.8)

This data further supports an immunological basis to neurological symptoms rather than the long held belief that it relates just to direct drug toxicity. We hypothesise that the headaches are the result of immune complex deposition due to binding of the specific IgG; perhaps by causing a low grade cerebral vasculitis. This phenomenon is seen usually in autoimmune disease but can rarely occur with drugs such allopurinol. Further work is needed to prospectively assess symptomatic patients during colomycin therapy.